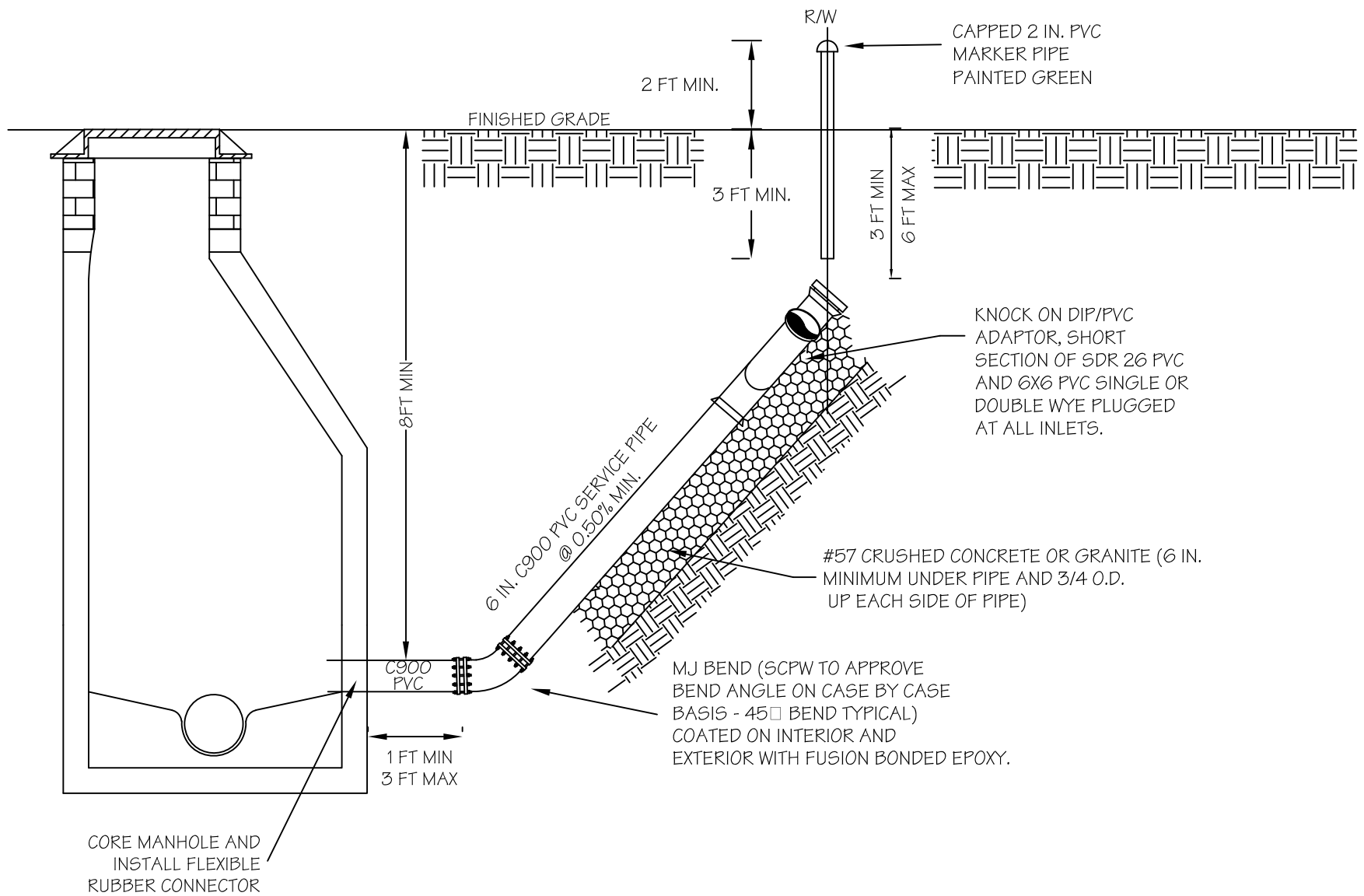


NOTES:

- STEEL PLATES SECURED WITH ASPHALT "RAMPS" SHALL BE REQUIRED UNTIL THE FILL HAS SET
- ASPHALT SHALL BE TYPE 1B

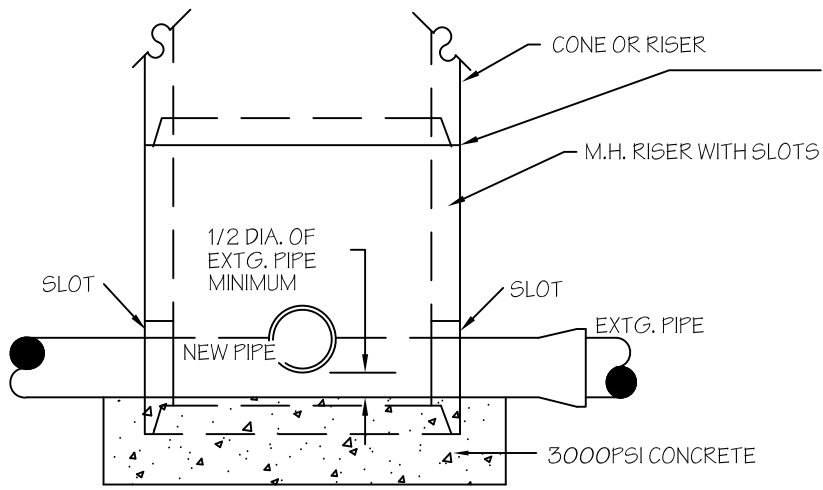
02/14/11



NOTES:

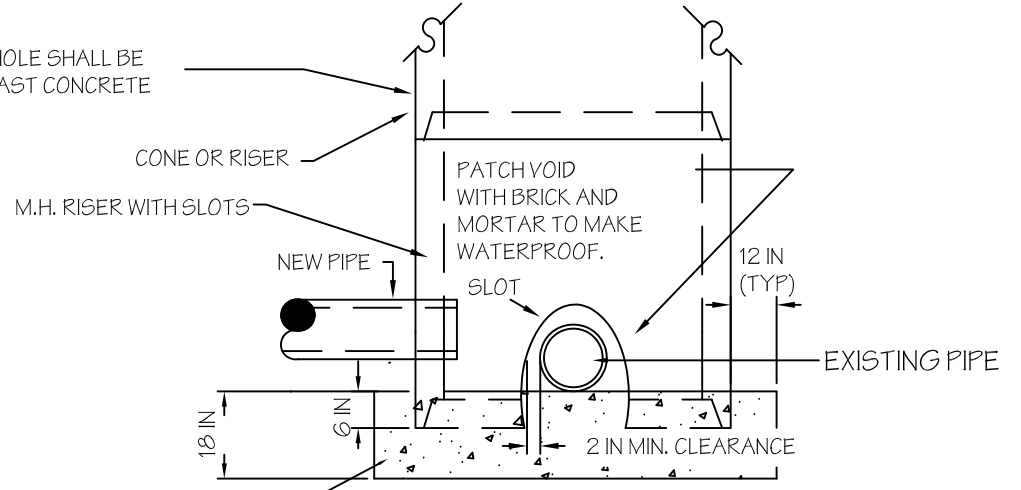
1. INVERT OF SERVICE SHALL BE LESS THAN 1.5 FT ABOVE THE OUTLET PIPE INVERT.
2. INVERT CHANNEL SHALL BE CONSTRUCTED TO DIVERT SERVICE FLOW TOWARD THE OUTLET PIPE.
3. ALL OTHER REQUIREMENTS OF "STANDARD PRECAST MANHOLES" SHALL BE MET.

9/15/17



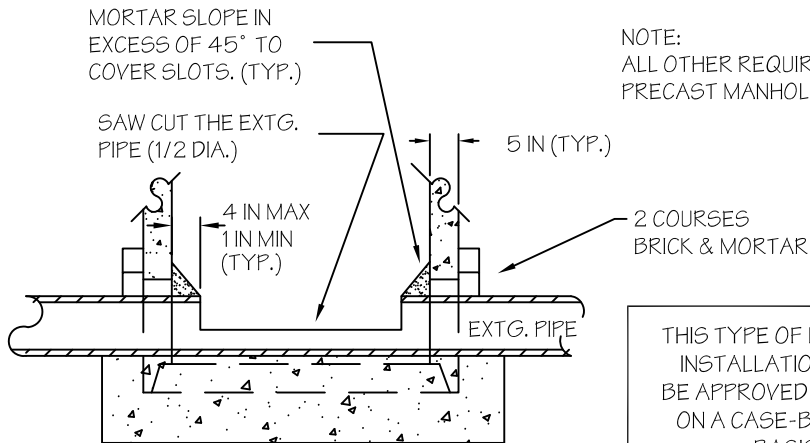
ELEVATION ALONG PIPE

MANHOLE SHALL BE PRECAST CONCRETE



ELEVATION THRU PIPE

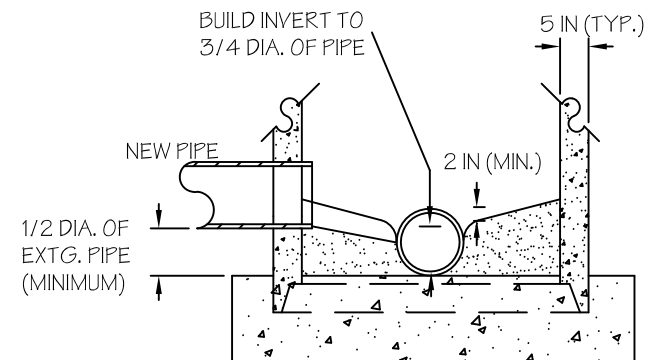
ALTERNATIVE METHOD:
 REMOVE 10 FT (MIN) SECTION OF EXISTING MAIN AND INSTALL STANDARD MANHOLE AND LENGTH OF NEW PIPE. AS WITH DOGHOUSE TYPE MANHOLES, THE NEW PIPE WILL HAVE TO BE CUT INSIDE THE MAHOLE TO RECEIVE THE FLOWS FROM THE NEW SYSTEM EXTENSION.



SECTION ALONG PIPE

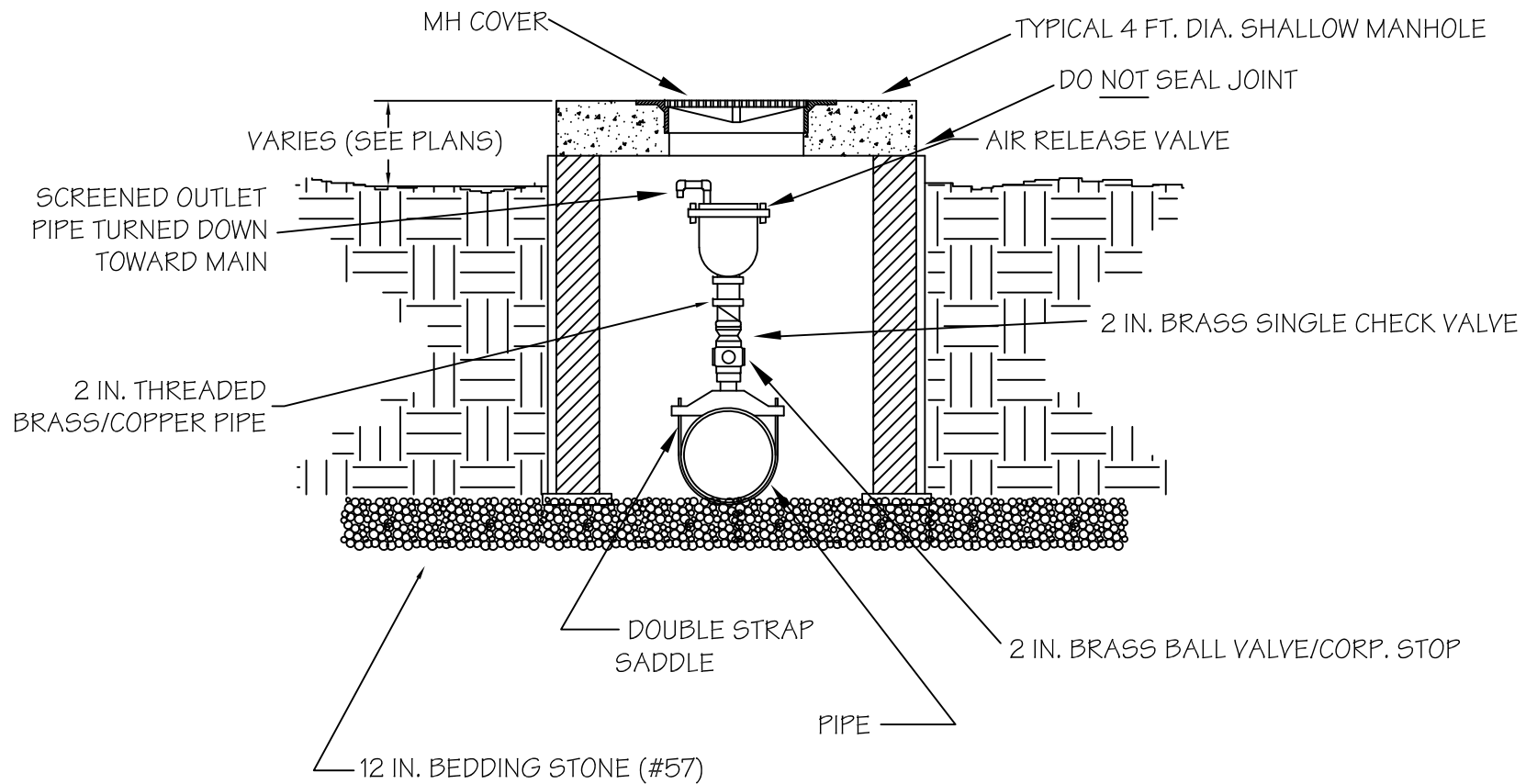
NOTE:
 ALL OTHER REQUIREMENTS OF "STANDARD PRECAST MANHOLES" SHALL BE MET.

THIS TYPE OF MANHOLE INSTALLATION MUST BE APPROVED BY SCPW ON A CASE-BY-CASE BASIS



SECTION THRU MANHOLE

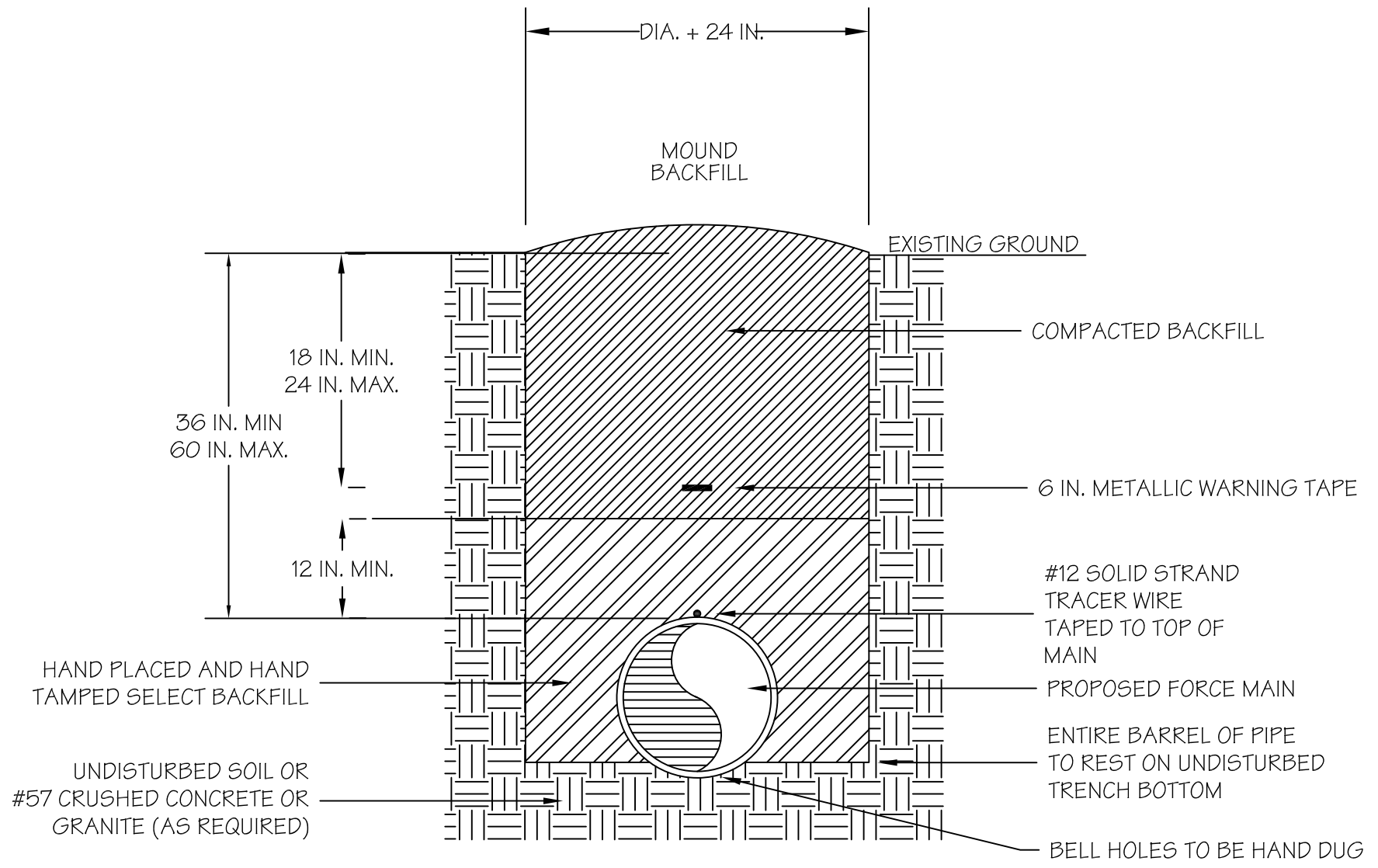
2/14/11



APPROVED MATERIALS

- SADDLE - CASCADE (CNS2, CS12, CS22), JCM (406), MUELLER (DR25), ROMAC (202NS), SMITH-BLAIR (317)
- AIR RELEASE - ARI (D-025)
- FRAME AND COVER - USF (1261, KL), EAST JORDAN (Y1384-4)

9/15/17

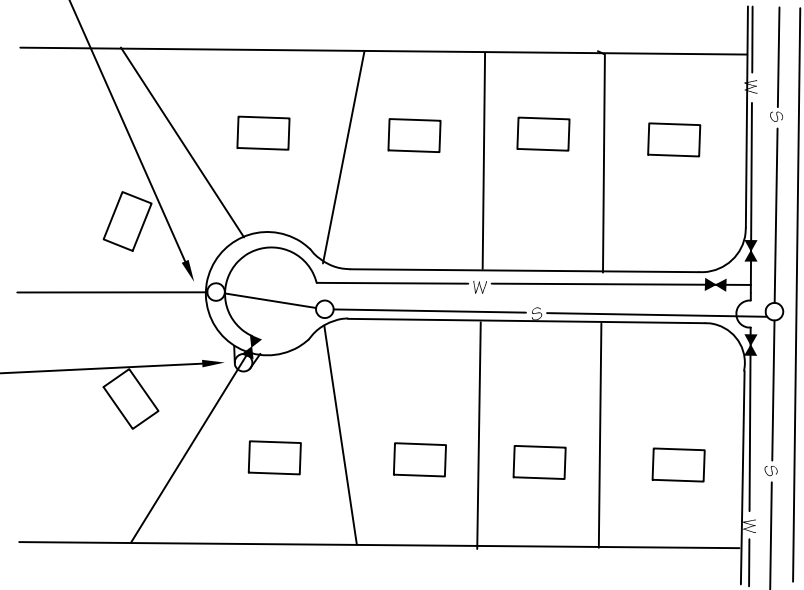


9/15/17

SEWER LINES SHALL END AT STANDARD MANHOLES
OUTSIDE OF PAVEMENT.

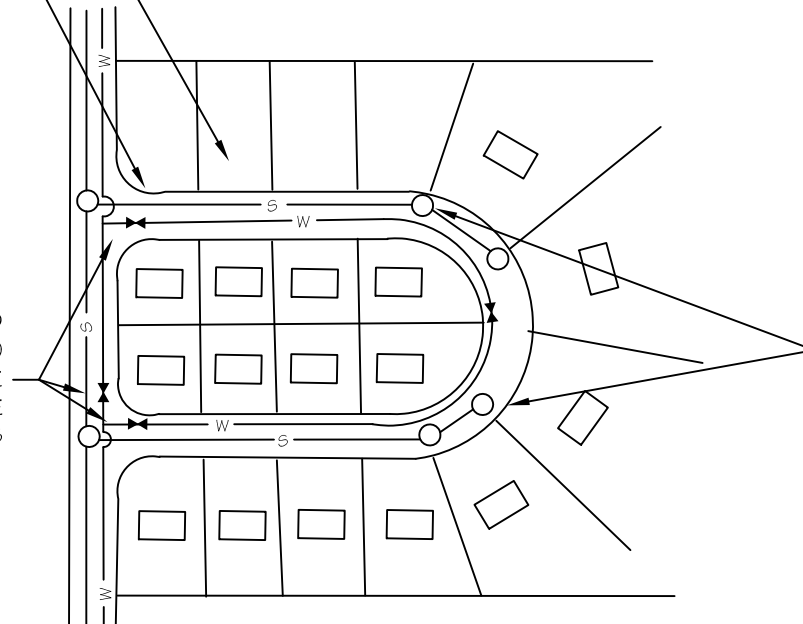
WATER AND SEWER LINES SHALL BE DESIGNED AND CONSTRUCTED
OUTSIDE OF PAVEMENT WHEREVER POSSIBLE. THE PREFERRED LOCATION
IS A UNIFORM DISTANCE (3' MIN FOR WATER, 5' MIN FOR SEWER) OFF
PARALLEL ROADS

WATER LINES SHALL END AT FIRE HYDRANTS WHEN
INSTALLED IN CUL-DE-SACS, OTHERWISE THE WATER
LINES SHALL BE LOOPED BACK TO THE MAIN ALONG THE
INTERSECTING STREET. FIRE HYDRANTS SHALL BE
PLACED ON RIGHT-OF-WAY LINE AND PROPERTY LINE
INTERSECTIONS WHEN POSSIBLE.



CUL-DE-SAC
N.T.S.

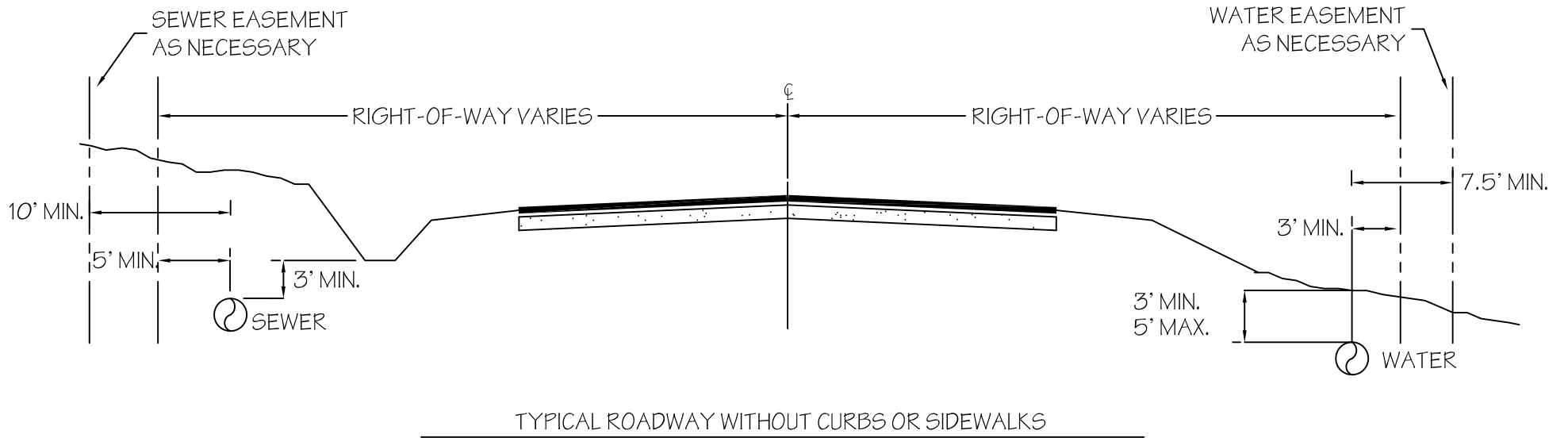
WATER LINES SHALL BE VALVED
TO MINIMIZE DISRUPTION TO
SERVICE DURING MAINTENANCE
AND TO FACILITATE
FLUSHING REQUIREMENTS



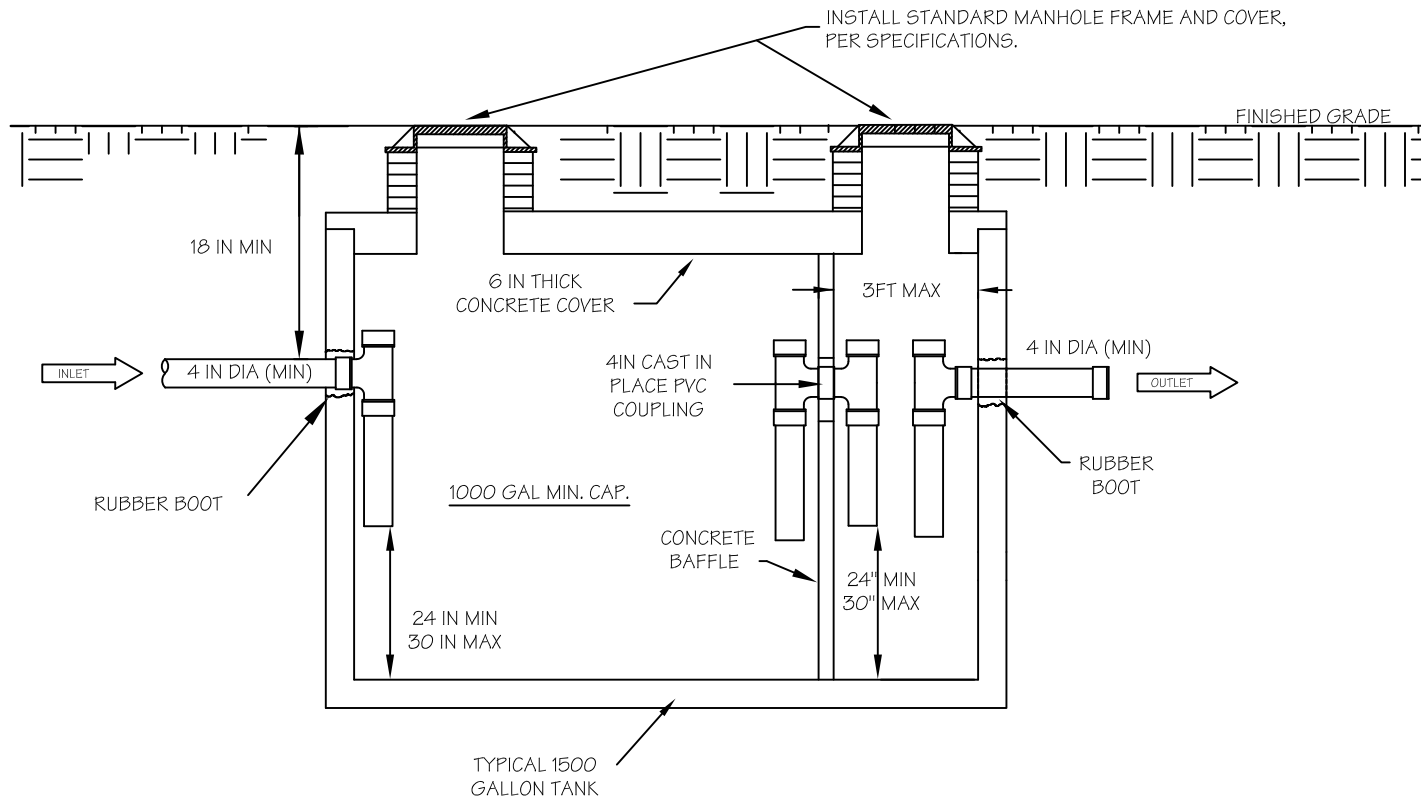
LOOP
N.T.S.

SEWER MANHOLES SHALL BE CONSTRUCTED IN LINE WITH
PROPERTY CORNER AND STREET RIGHT-OF-WAY
INTERSECTIONS.

2/14/11



02/14/11



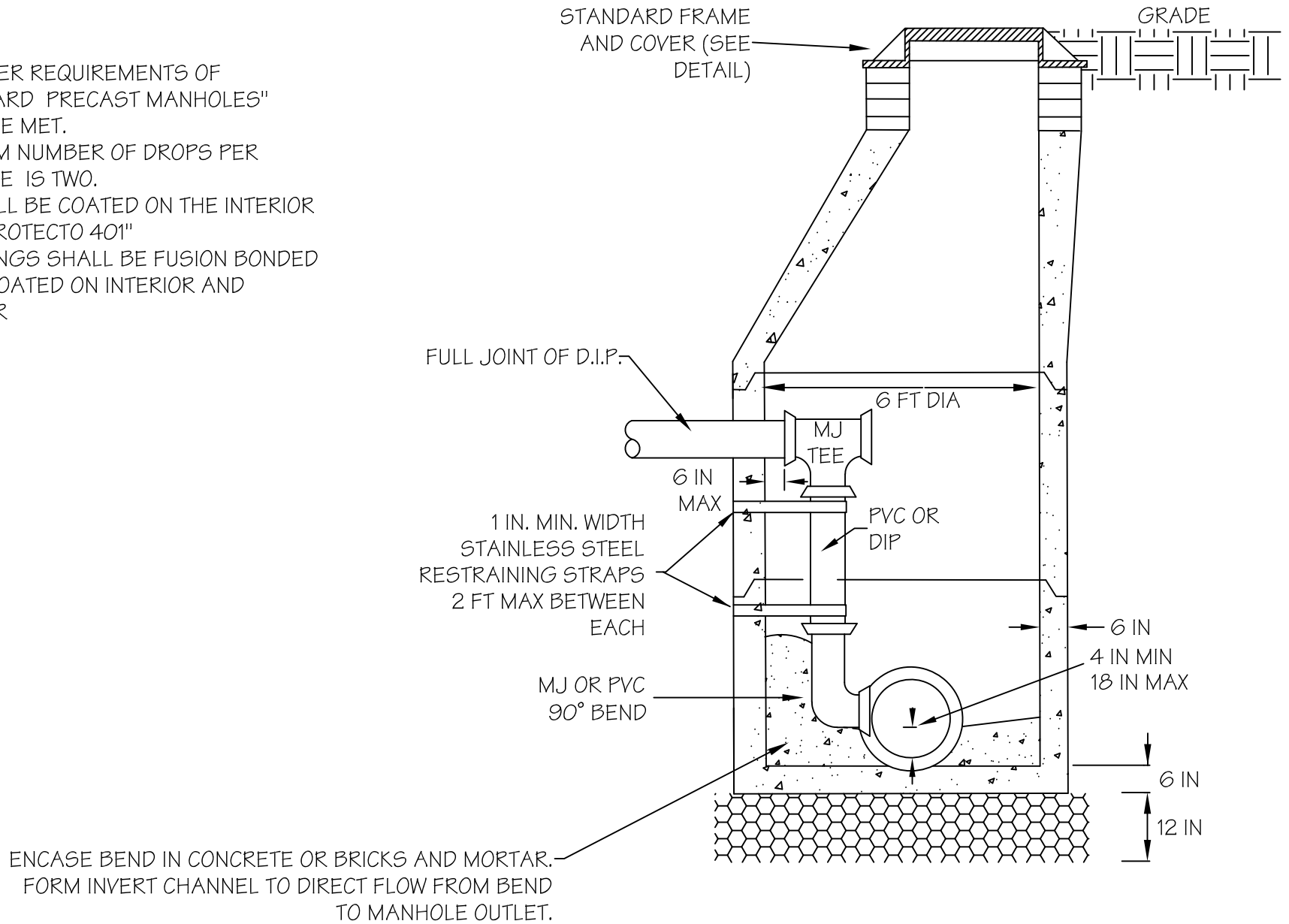
NOTES:

1. REINFORCE CONCRETE COVER WITH MIN 0.5 IN RE-BARS 8 IN O.C. EACH WAY
2. INVERT IN SHALL BE $\frac{1}{2}$ PIPE DIAMETER ABOVE BAFFLE PIPE INVERT AND ONE FULL PIPE DIAMETER ABOVE THE OUTLET PIPE INVERT
3. TRAP INLET AND OUTLET PIPES MUST BE VISIBLE FROM ACCESS HOLES

8/21/14

NOTES:

- ALL OTHER REQUIREMENTS OF "STANDARD PRECAST MANHOLES" SHALL BE MET.
- MAXIMUM NUMBER OF DROPS PER MANHOLE IS TWO.
- DIP SHALL BE COATED ON THE INTERIOR WITH "PROTECTO 401"
- MJ FITTINGS SHALL BE FUSION BONDED EPOXY COATED ON INTERIOR AND EXTERIOR



09/15/17

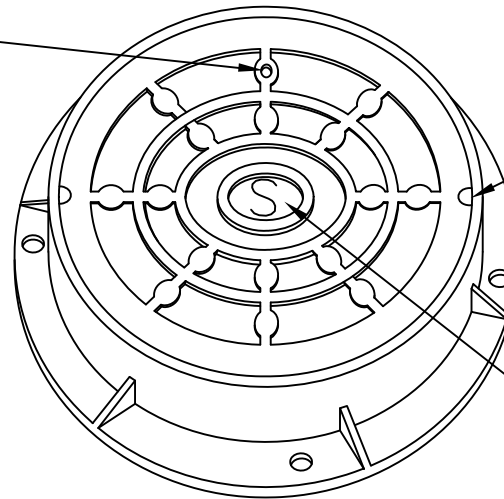
STANDARD FRAME AND COVERS
EAST JORDAN IRON WORKS #V-1384
US FOUNDRY #USF-668, KL

WATERPROOF FRAME AND COVER
US FOUNDRY #USF-668, KL-BWTL
EAST JORDAN IRON WORKS #V-1384 WITH CAMLOCK
US FOUNDRY #USF-195, E-ORS (RUNOFF)

INVERTED FRAME
EAST JORDAN IRON WORKS 285511

FLAT SLAB FRAME AND COVER
US FOUNDRY #USF-1261, KL
EAST JORDAN IRON WORKS #V-1384-4

PROVIDE 1 VENT HOLE
(UNLESS WATERPROOF
COVER SPECIFIED)

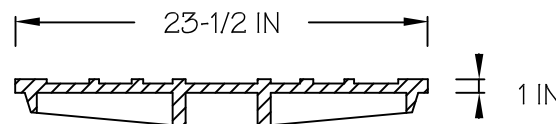


PROVIDE 2 PICK HOLES

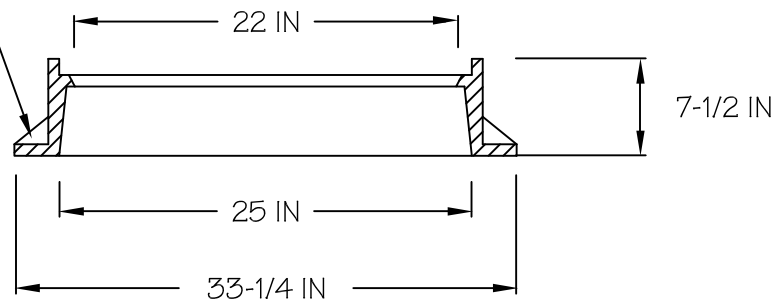
"S" OR "SANITARY SEWER" SHALL
BE CAST ON THE COVER

NOTE:

MANHOLE FRAMES AND COVERS
WITHIN 2500 PIPED FEET OF A PUMP
STATION OR OTHER CORROSIVE
LOCATIONS SHALL BE EAST JORDAN
IRON WORKS COMPOSITE.



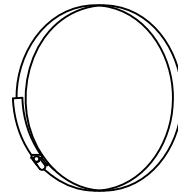
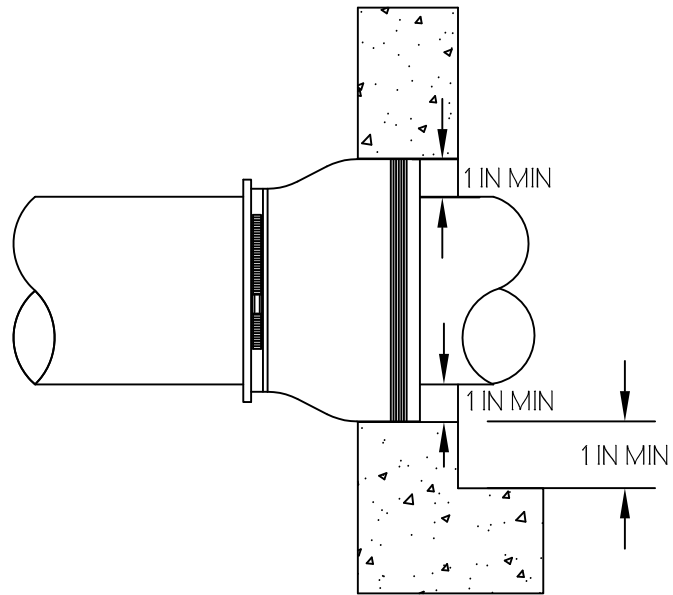
FOUR-1 IN DIA
ANCHOR HOLES



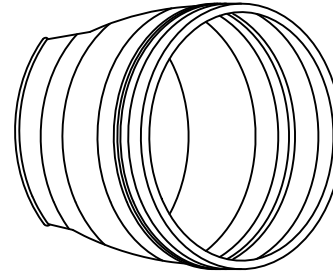
09/15/17

APPROVED MATERIALS

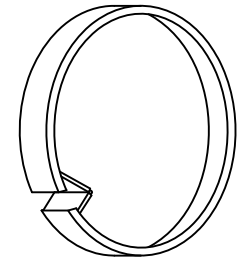
BOOTS - NPC (KOR-N-SEAL) AND PRESS-SEAL (PSX DIRECT DRIVE)



STAINLESS STEEL
PIPE CLAMP

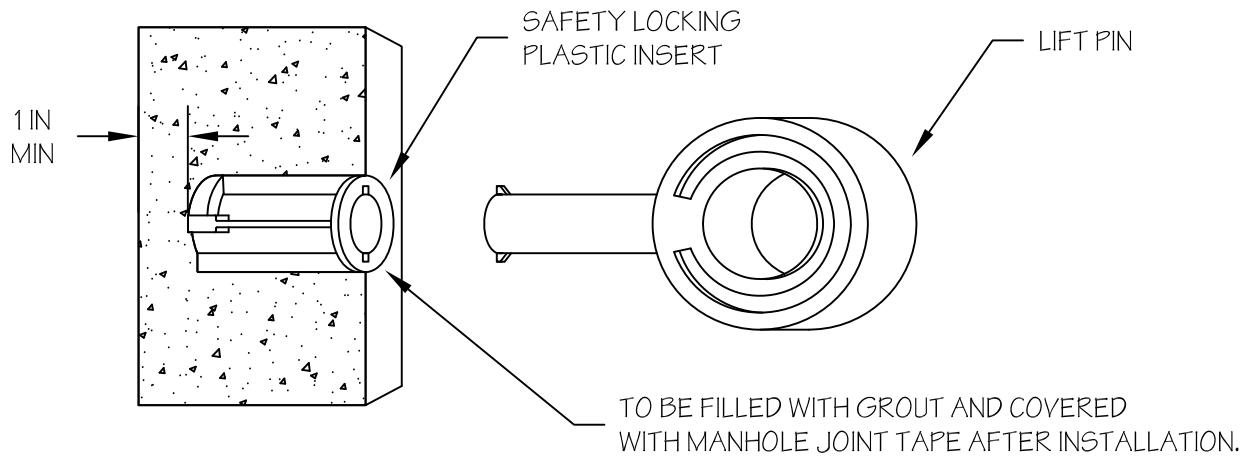


FLEXIBLE SYNTHETIC
RUBBER CONNECTOR



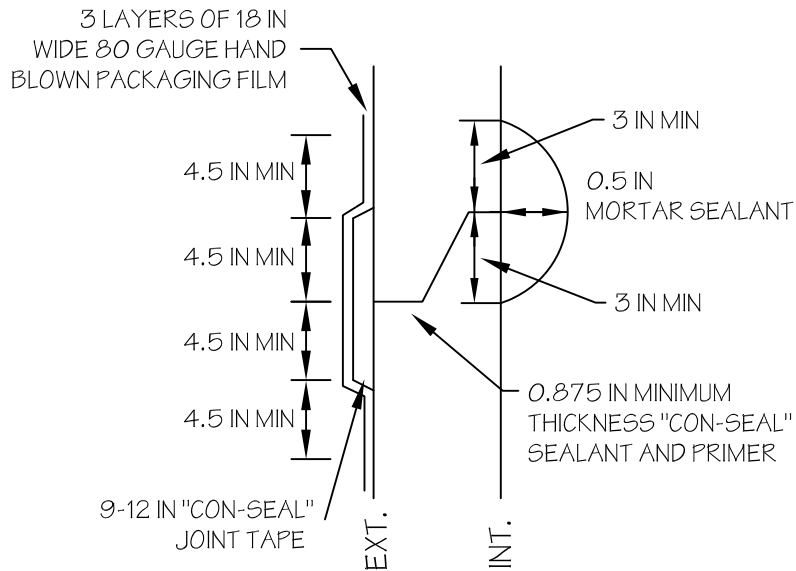
STAINLESS STEEL
EXPANSION RING

MANHOLE ENTRANCE "BOOT"



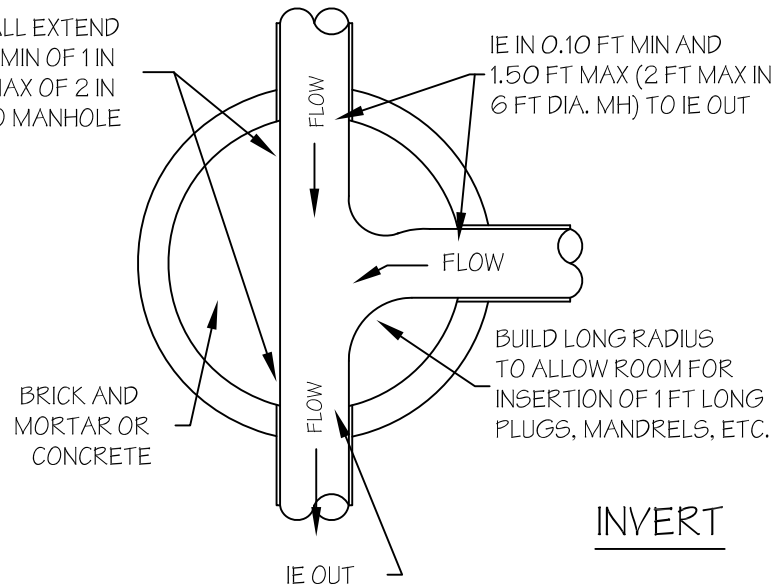
MANHOLE LIFT HOLES

02/14/11

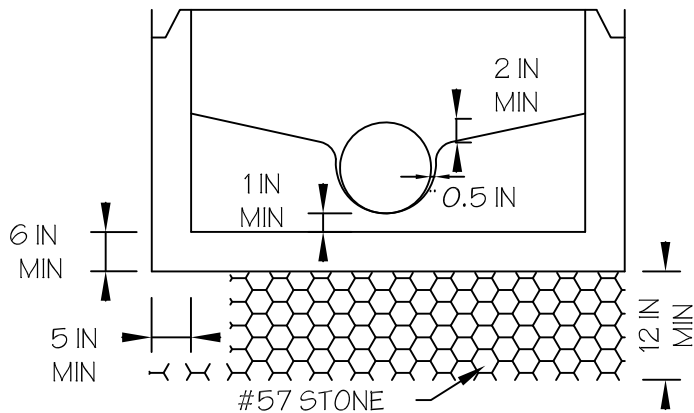


MH JOINT

MAINS SHALL EXTEND
A MIN OF 1 IN
AND MAX OF 2 IN
INTO MANHOLE

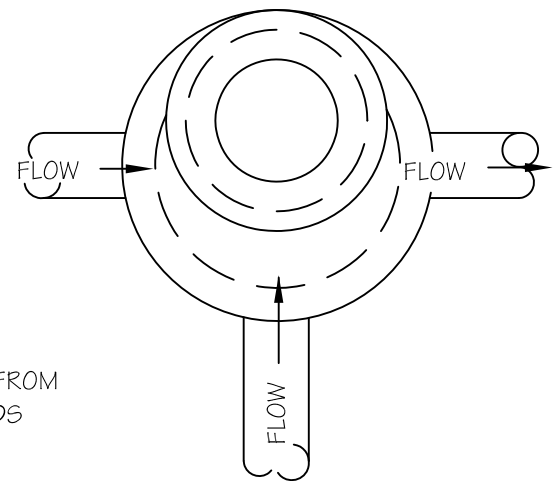


- NOTES:
- *MORTAR/CONCRETE FOR INVERTS AND JOINTS SHALL CONTAIN CONSHIELD MICROBIOLOGICALLY INDUCED CORROSION PREVENTION SOLUTION
 - *INVERTS AND JOINTS SHALL BE TROWEL SMOOTH - FREE FROM BRUSH MARKS, RIDGES AND BURRS



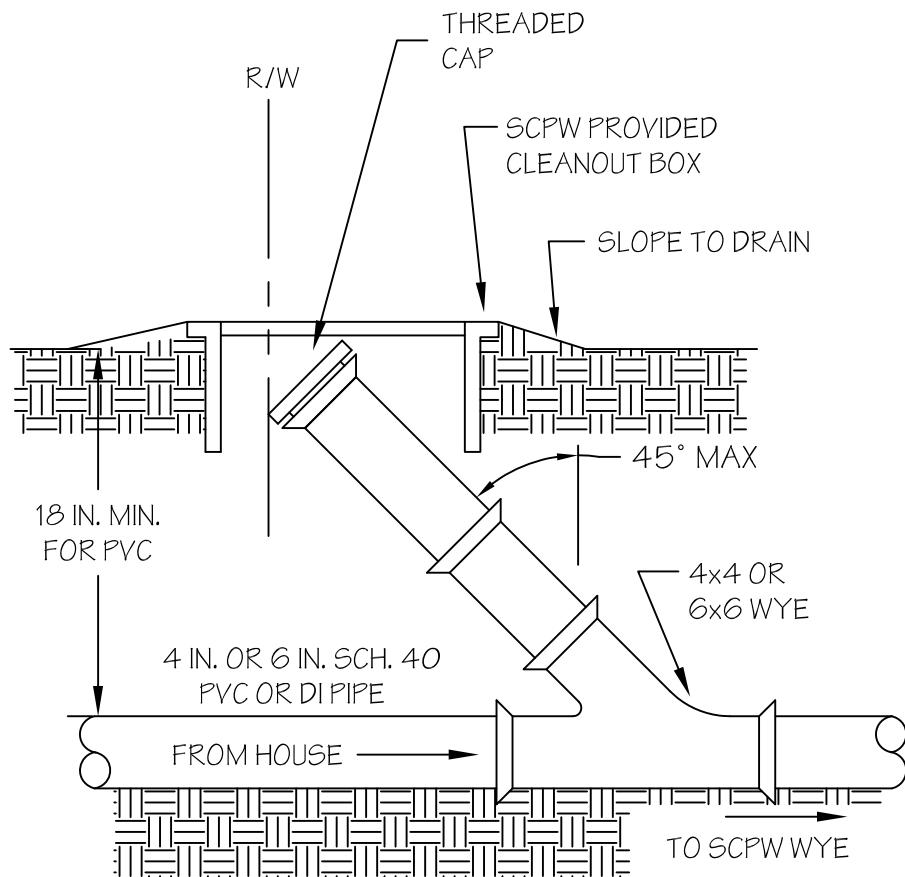
INVERT

ALIGN CONE
VERTICALLY AND AWAY FROM
TRAFFIC, OTHER HAZARDS
AND PIPE ENTRANCES.

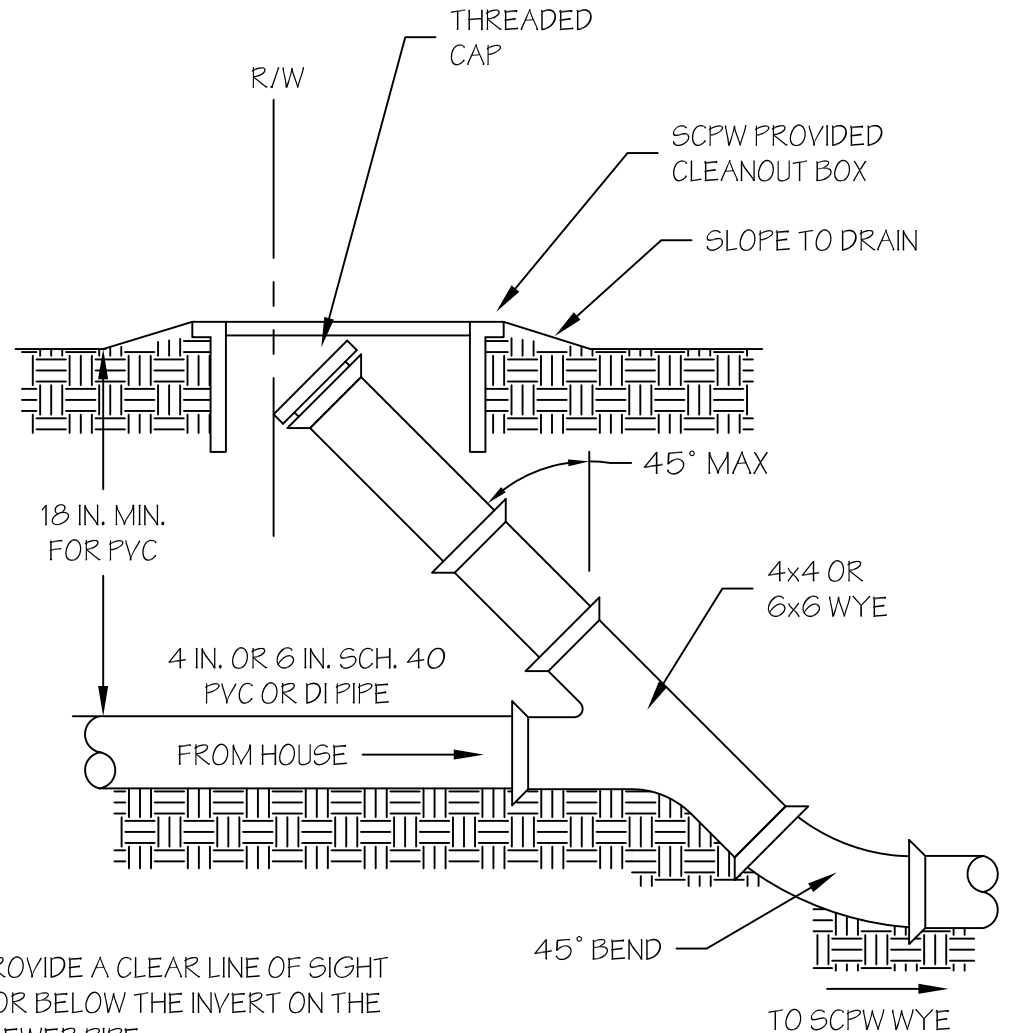


CONE ALIGNMENT

02/14/11



ALT. 1

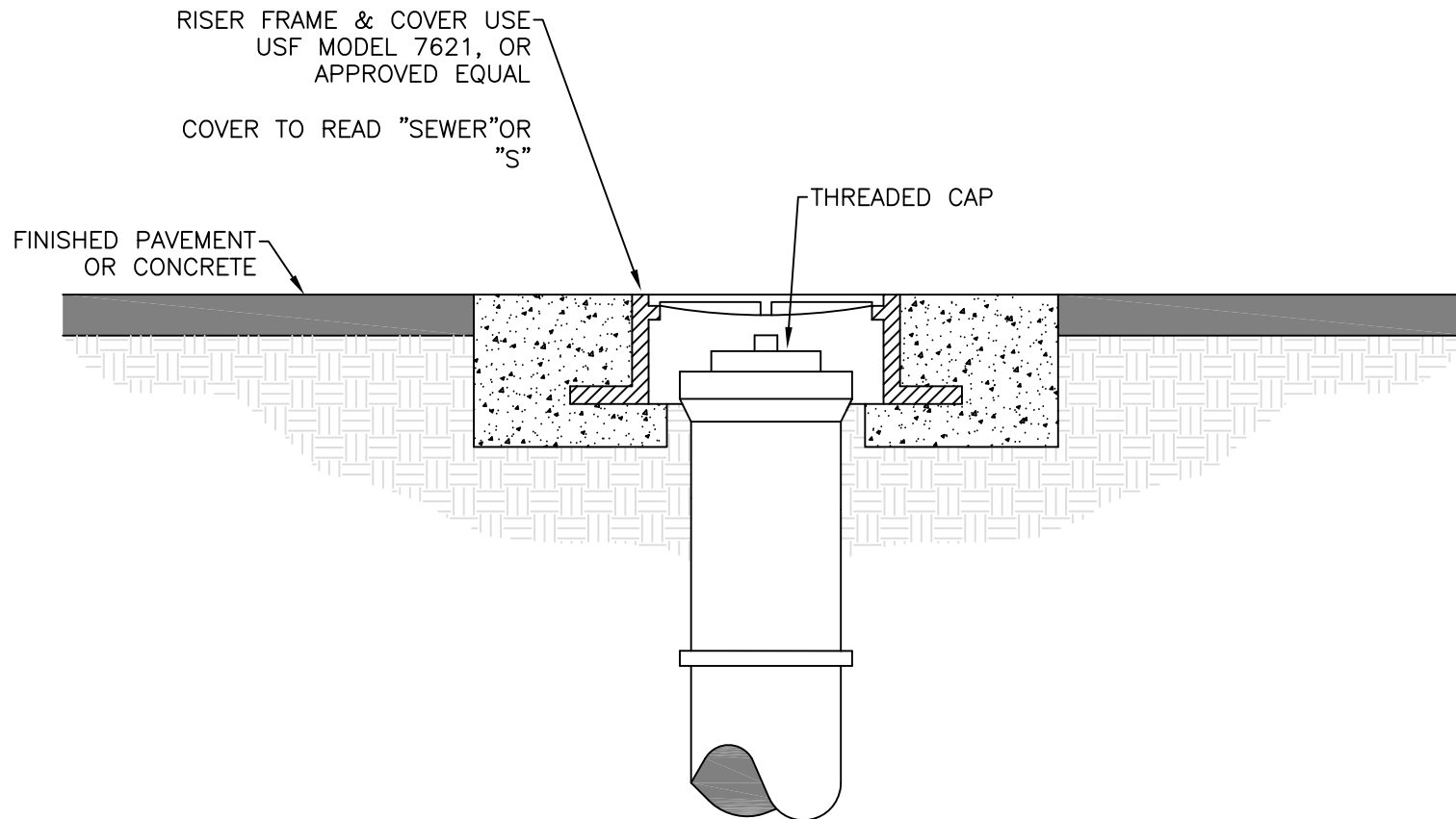


ALT. 2

NOTES:

- THE CLEANOUT MUST PROVIDE A CLEAR LINE OF SIGHT FROM THE GROUND TO OR BELOW THE INVERT ON THE CUSTOMER'S PRIVATE SEWER PIPE.
- DEPENDING ON THE SEVERITY OF SLOPE IN SCPW'S TAP, IT MAY NOT BE PRACTICAL FOR THE CLEANOUT BRANCH TO BE 45° OF VERTICAL
- CONNECTION WILL NOT BE PERMITTED UNTIL THE BUILDING BEING SERVED IS "ROUGHED IN" TO PREVENT STORM WATER FROM ENTERING THE SEWER SYSTEM.

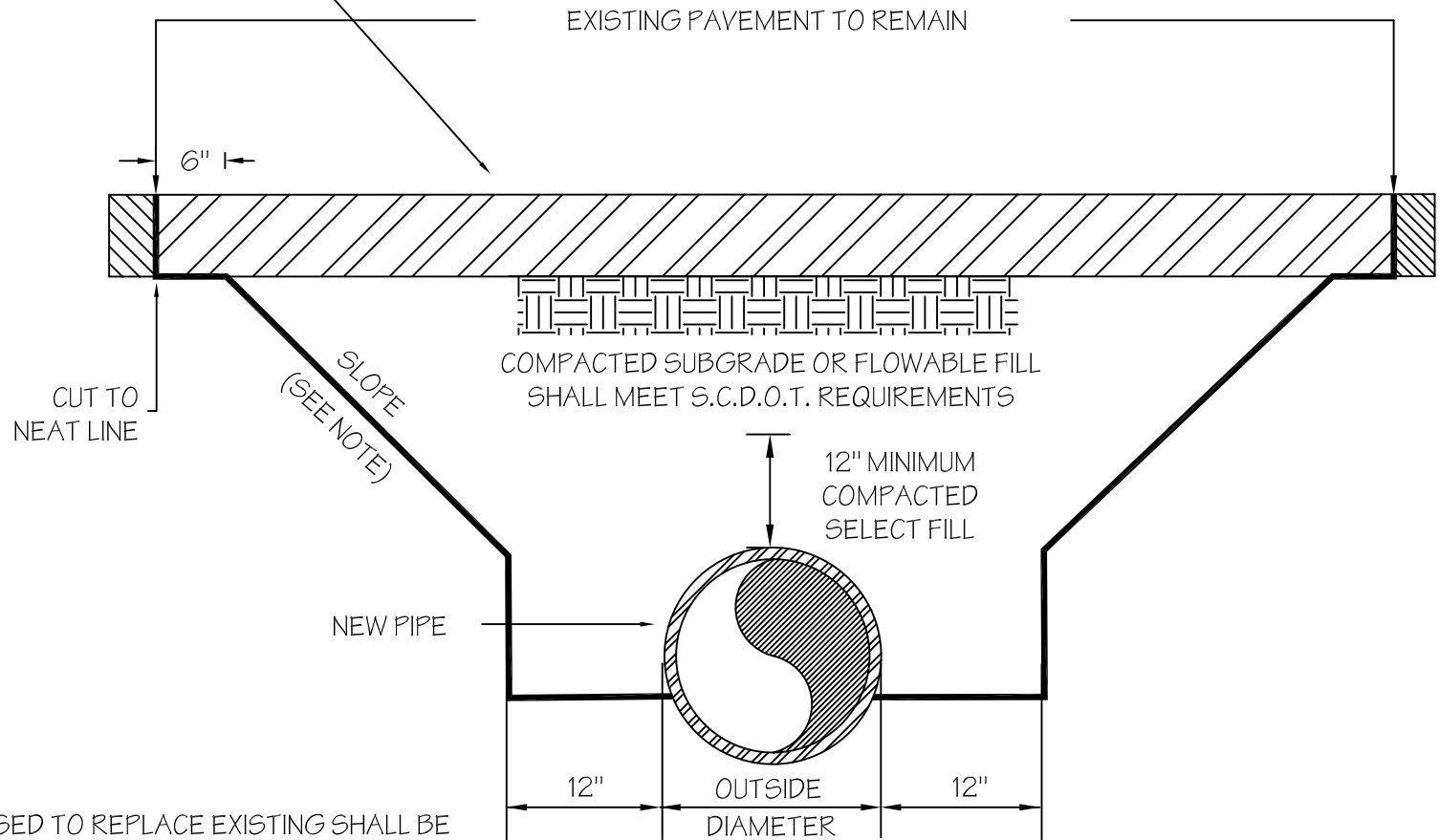
02/14/11



NOTES:

1. THE INSPECTION FRAME AND COVER IS TO BE USED ALL PAVED AND CONCRETE APPLICATIONS.

EXISTING CONCRETE OR PAVEMENT TO BE SAW CUT AND REMOVED 6" BEYOND EACH SIDE OF THE EXCAVATION. IT SHALL BE REPLACED WITH A MINIMUM OF 3" ASPHALT OR 6" OF 3000 PSI CONCRETE



EXISTING PAVEMENT TO REMAIN

6"

CUT TO NEAT LINE

SLOPE
(SEE NOTE)

COMPACTED SUBGRADE OR FLOWABLE FILL
SHALL MEET S.C.D.O.T. REQUIREMENTS

12" MINIMUM
COMPACTED
SELECT FILL

NEW PIPE

12"

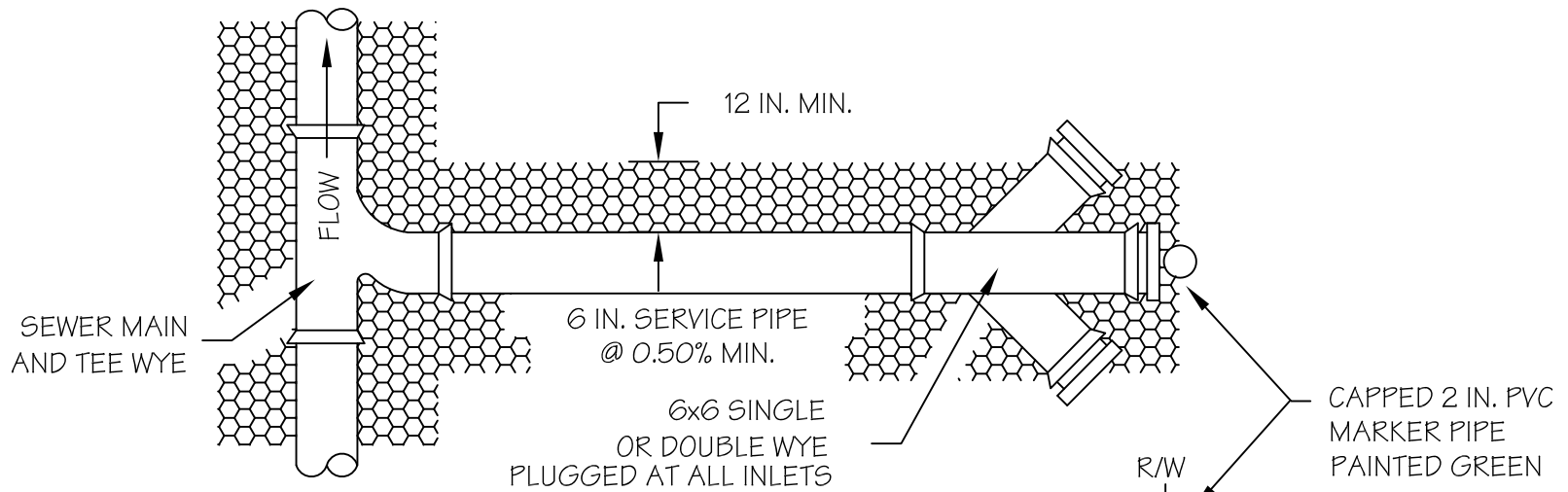
OUTSIDE
DIAMETER

12"

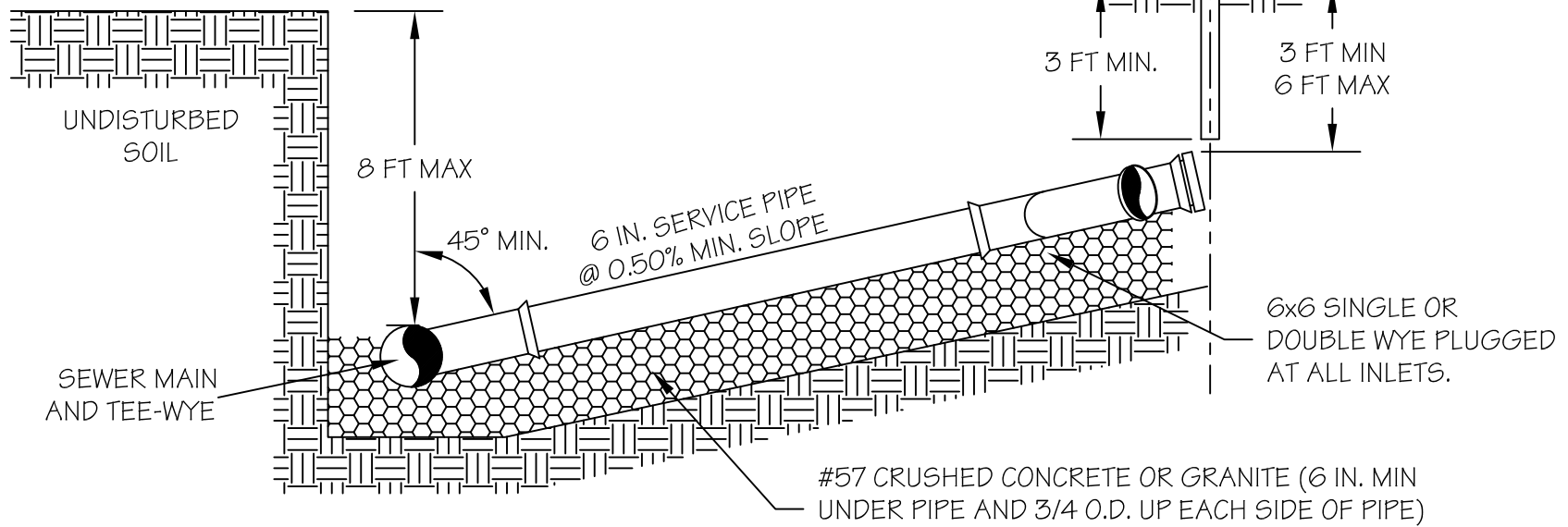
NOTES:

1. PAVEMENT USED TO REPLACE EXISTING SHALL BE SIMILAR AND EQUAL TO THE TYPE AND THICKNESS REMOVED UNLESS APPROVED BY THE ENGINEER
2. WHERE THE DEPTH EXCEEDS 4' AND SHORING AND BRACING ARE NOT USED, EXCAVATION SIDE SLOPES SHALL MEET ALL OSHA GUIDELINES

02/14/11

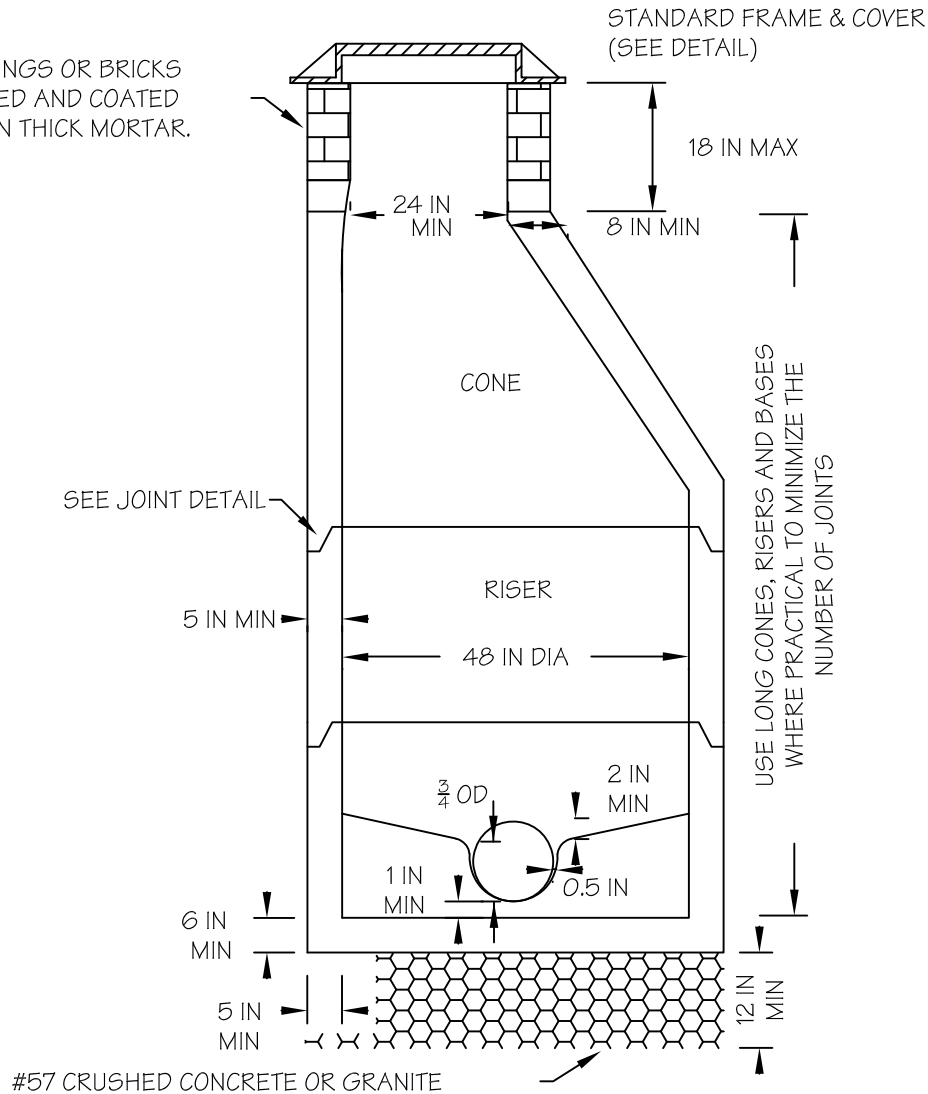


NOTE:
INSTALL 6 IN. WARNING TAPE 18 IN. ABOVE MAINS AND SERVICES.



09/15/17

GRADE RINGS OR BRICKS
SET, STACKED AND COATED
IN 0.5 IN THICK MORTAR.



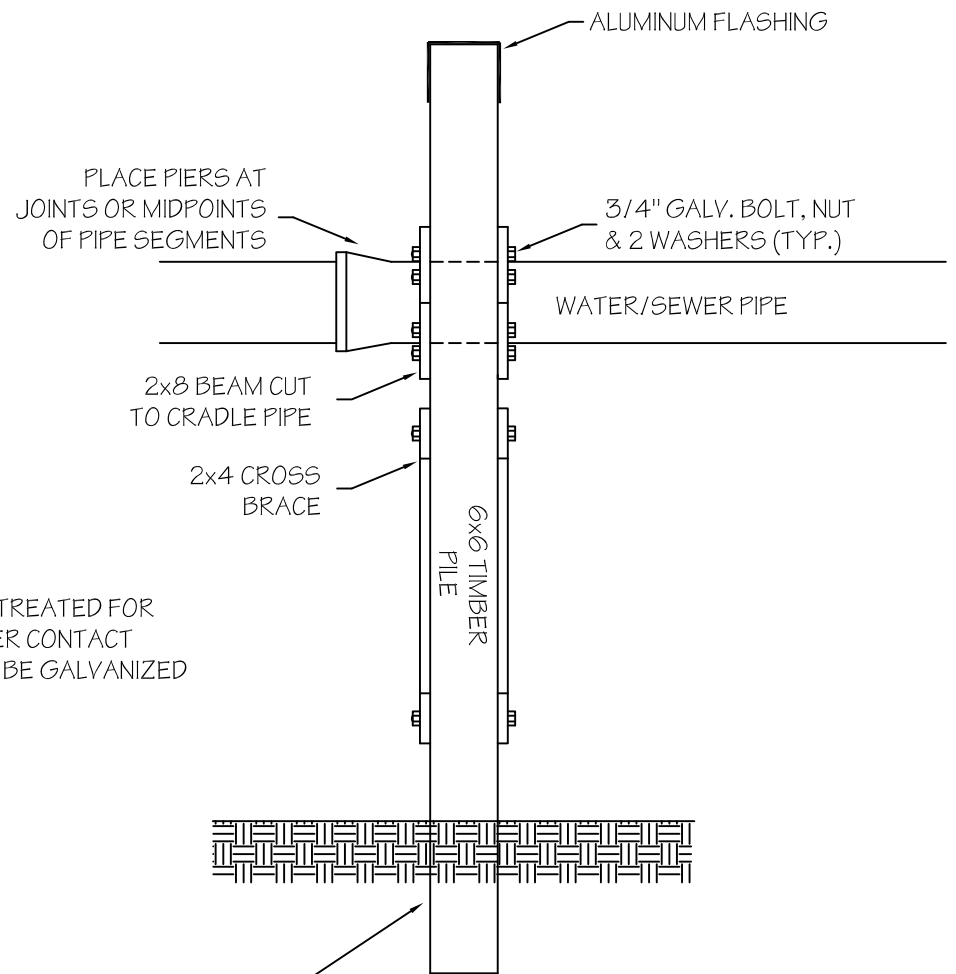
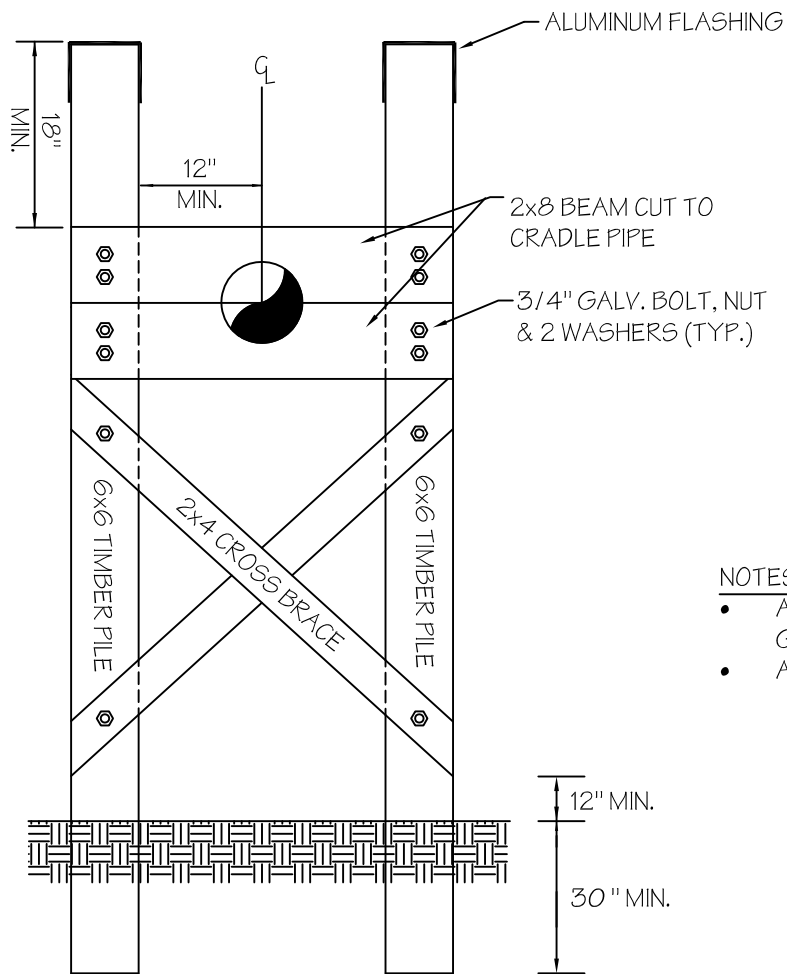
TYPICAL MANHOLE LAYOUT

NTS

NOTES:

1. ALL PRECAST CONCRETE, POURED IN PLACE CONCRETE AND MORTAR SHALL CONTAIN CONSHIELD MICROBIOLOGICALLY INDUCED CORROSION PREVENTION SOLUTION - PRECAST CONCRETE SHALL ALSO CONTAIN COLOR TINT.
2. ONLY ECCENTRIC CONES SHALL BE USED.
3. COAT MANHOLE INTERIORS AND/OR INSTALL INFLOW PREVENTION "BOWLS" AS DIRECTED BY THE ENGINEER AND/OR SCPW.
4. RUBBER BOOTS ARE REQUIRED AT ALL MANHOLE OPENINGS.
5. MANHOLE TOPS SHALL BE SET FLUSHED WITH GRADE OR 0.10 FT MAX ABOVE GRADE IN DEVELOPED/LANDSCAPED AREAS - MANHOLE TOPS IN WOODED OR UNDEVELOPED AREAS SHALL BE SET ABOVE THE 50 YEAR FLOOD ELEVATION, BUT NO LESS THAN 1 FT ABOVE GRADE.
6. WHERE INLET PIPE DIAMETERS ARE SMALLER THAN THE OUTLET PIPE, THE CROWN OF THE SMALLER PIPE SHALL BE SET AT THE SAME ELEVATION AS THE CROWN OF THE OUTLET PIPE.
7. ONLY 4000 PSI CONCRETE AND GRADE 60 STEEL SHALL BE USED IN THE CONSTRUCTION OF PRECAST MANHOLES.
8. STEPS AND PRECAST INVERTS ARE PROHIBITED.
9. LIFT HOLES TO BE FILLED WITH MORTAR AND COVERED WITH JOINT TAPE.
10. MANHOLE SECTIONS, JOINTS AND INVERTS SHALL BE TROWEL SMOOTH (FREE FROM BRUSH MARKS, RIDGES AND BURRS) AND HOLIDAY FREE.

09/15/17

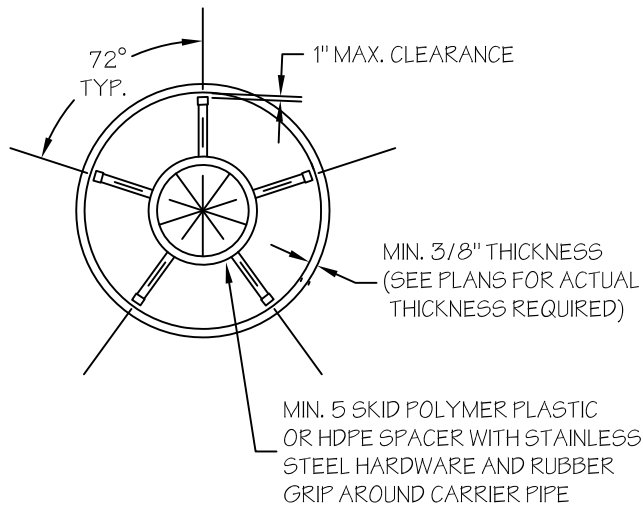


NOTES:

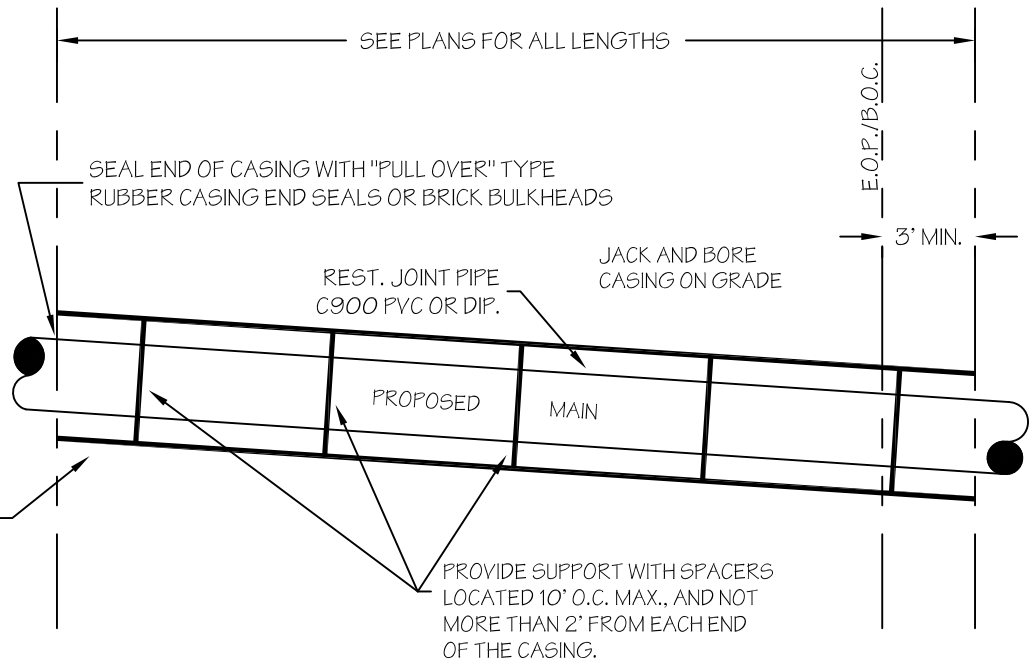
- ALL TIMBER TO BE TREATED FOR GROUND AND WATER CONTACT
- ALL HARDWARE TO BE GALVANIZED

BACKFILL PILE EXCAVATIONS WITH 3000 PSI CONCRETE (MIN. 6" EACH SIDE PILE)

02/14/11



MINIMUM 3/8" CASING THICKNESS COATED ON INTERIOR AND EXTERIOR WITH 8 MILS DRY FILM THICKNESS COAL TAR EPOXY, ELSE USE 1/2" MINIMUM THICKNESS UNCOATED STEEL CASING



NOTES

- ROD WATER MAIN FITTINGS TO THE CASING
- CONTRACTOR IS RESPONSIBLE FOR SECURING PERMISSION FROM ADJACENT LAND OWNERS FOR THE BORE PIT, IF NECESSARY
- THE BORE PIT SHALL BE BACKFILLED WITH SELECT FILL MATERIAL IN ACCORDANCE WITH THE SPECS

PREFERRED MATERIALS

- SPACERS - BWM (KP), CASCADE (PHOENIX GOLD), RACI (MEDIUM)
- END SEALS - BWM (PO), CASCADE (CCES)
- CASING - SOUTHLAND PIPE

2/14/11